



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/635,291 | 08/06/2003 | Charles J. Martin | 02-ASD-341 (GT) | 8035 |
| 200 | 7590 | 12/27/2005 | EXAMINER | |
| EATON CORPORATION EATON CENTER 1111 SUPERIOR AVENUE CLEVELAND, OH 44114 | | | PRICE, CRAIG JAMES | |
| | | ART UNIT | PAPER NUMBER | |
| | | | 3753 | |

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|------------------------------|--------------------------------|-------------------------|
| | 10/635,291 | MARTIN ET AL. |
| | Examiner Craig Price | Art Unit 3753 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06 August 2003 and 25 February 2005.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-24 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 06 August 2003 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/25/2005.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____ .

DETAILED ACTION

1. Claims 1-24 are pending.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference character identified as 42, in Figure 3 is not described within the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "40" has been used to designate both cap and barbs. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted

after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 4 and 15 are objected to because of the following informalities:

Claim 4, line 2, "elastermeric", should be –elastomeric,
Claim 15, line 1, "herein", should be –wherein.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 1 is rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

It is unclear if the "end distal the inlet end", of claim 1 is the end closest to cap 38, or opposite inlet 14. The claim recites that the inlet end is the end receiving fuel, which is seen as end 14. The "distal"end would be the end at cap (38). However, claim 1 recites the distal end has the means for attaching to the fuel tank spud, but the spud is near the inlet end, not the distal end. Clarification is required.

7. Claims 2,3,16, and 19-23 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The antecedent basis of the following terms are unclear;

Claim 2, line 2, "a siphon hose", should be – the siphon hose,

Claim 3, line 3, "a siphon hose", should be – the siphon hose,

Claim 16, line 1, "a poppet", should be –the poppet,

Claim 19, line 1, "a tubular", should be –the tubular,

Claims 20-23, "a poppet", should be –the poppet.

All of the above terms have been recited prior to the above instances.

Therefore, each term should be preceded with "the" or "said", to provide consistent antecedent bases.

8. Claim 10 is rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

It is unclear if the "turbulence reducing surfaces", of claim 10 is the same as the "surfaces" recited in claim 1, paragraph (d). There appears to be a single set of surfaces providing both the function recited in claim 1 and the function recited in claim 10.

However, the claim structure appears to indicate two distinct surface arrangements.

Clarification is necessary.

9. Claims 11 and 12 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

It is unclear if the "said body distal end", in claims 11 and 12, is the inlet end 14 or the cap end 38. The term lacks antecedent basis. Please clarify.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1,2,4, and 6-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Devall et al. (US 6,056,029).

Regarding claim 1, Devall et al. depicts a valve (12) using a siphon tube (32), comprising a generally tubular body (90,92,155,158), with an inlet end (156) adapted for receiving fuel upon refueling through the filler tube and an annular valve seat (114) therein downstream of the inlet and an end (148,158) distal the inlet end for attachment to a fuel tank spud, a poppet (112) moveable between a position closing and a position opening the valve seat including means (116) operable for biasing the valve to the closed position, an outlet opening (166) formed in the wall of the body downstream of the valve seat, the poppet including surfaces (212,228,230) operable to direct the end of a siphon hose inserted through the inlet end and the valve seat outwardly through the outlet as the siphon hose moves the poppet to the open position (Col. 7, Lns. 21-65) and, the poppet having an annular flexible seal (192) located thereon for sealing against the valve seat in figures 6a,7 and 9. The term "overmolded" is given no patentable weight for the apparatus, as this is considered to be a method step of manufacture that results in no difference in structure. See MPEP 2113.

Regarding claim 2, Devall et al. shows the surfaces (212,228,230) operable to direct the end of a siphon hose include surfaces selected from one of flutes (214) and vanes in Figure 9.

Regarding claim 4, Devall et al. disclose the seal (192) is formed of elastomeric material in (Col.8, Lns. 24-28).

Regarding claim 6, Devall et al. depicts the body includes a plurality of circumferentially spaced outlet openings (170) formed in the wall downstream of valve seat in Figure 6a. Being unsealed, at least some fuel can pass through the openings.

Regarding claim 7, Devall et al. depicts the poppet with guide surfaces (250) thereon slidably engaging corresponding surfaces on the body (174) and operable to prevent relative rotation of the poppet with respect to the body.

Regarding claim 8, Devall et al. depicts that the poppet is formed of plastic material, as shown in Figure 7 (as identified by the cross hatching in Figure 7, see MPEP 608.02, IX drawing symbols chart for various cross hatching material features).

Regarding claim 9, Devall et al. disclose that the poppet includes a centrally disposed guide post (190) slidably guided within the body in (Col. 8, Lns. 35-36).

Regarding claim 10, Devall et al. depicts that the poppet includes turbulence reducing surfaces (212,228,230) formed on an upstream side thereof in Figure 7.

Regarding claims 11 and 12, Devall et al. disclose that the body distal end includes a guide member snap-locked member (96) having surfaces (142) thereon for snap engagement with a tank spud in (Col. 6, Lns. 36-46).

12. Claims 1,3,6,7,9, and 10 are rejected under 35 U.S.C. 102(a) as being anticipated by Farrenkopf et al. (US 2003/0136448).

Regarding claim 1, Farrenkopf et al. depicts a valve (10) using a siphon tube (W), comprising a generally tubular body (12,18), with an inlet end (14) adapted for receiving fuel upon refueling through the filler tube and an annular valve seat (42) therein downstream of the inlet and an end (12) distal the inlet end for attachment to a fuel tank spud, a poppet (41) moveable between a position closing and a position opening the valve seat including means (38) operable for biasing the valve to the closed position, an outlet opening (22) formed in the wall of the body downstream of the valve seat, the poppet including surfaces (32,36, and in particular 50) operable to direct the end of a siphon hose inserted through the inlet end and the valve seat outwardly through the outlet as the siphon hose moves the poppet to the open position (Col. 5, Lns. 12-18) and, the poppet having an annular flexible seal (40) located thereon for sealing against the valve seat in figures 2 and 3. The term "overmolded" is given no patentable weight for the apparatus, as this is considered to be a method step of manufacture that results in no difference in structure. See MPEP 2113.

Regarding claim 3, Farrenkopf et al. disclose that the body including a plurality of raised surfaces (28) disposed about a portion of the interior upstream of the valve seat, and operable to deflect the end of a siphon hose toward one side of the poppet and toward the outlet opening (Figures 3,4 and Col. 5, Lns.12-18).

Regarding claim 6, Farrenkopf et al. disclose that the body includes a plurality of circumferentially spaced outlet openings (22) formed in the wall downstream of valve seat in figure 2.

Regarding claim 7, Farrenkopf et al. depicts that the poppet includes guide surfaces (34) thereon slidably engaging corresponding surfaces on the body (13) and operable to prevent relative rotation of the poppet with respect to the body in figures 2 and 3.

Regarding claim 9, Farrenkopf et al. disclose that the poppet includes a centrally disposed guide post (34) slidably guided within the body in (Col. 6, Lns. 1-5).

Regarding claim 10, Farrenkopf et al. depicts that the poppet includes turbulence reducing surfaces (32,36 and in particular 50) formed on an upstream side thereof in Figure 6.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Devall et al. (US 6,056,029) in view of Cook et al. (US 5,199,404).

Devall et al. teaches all of the claimed invention, although lacking a seal formed of fluorosilicone elastomer.

Cook et al. teaches a valve being used in a vehicle having an insert molded seal formed of fluorosilicone elastomer in a gasoline environment (Col. 9, Lns. 57-68 onto Col. 10 Lns. 1-2).

In view of the Cook et al. patent, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the molded fluorosilicone elastomer of Cook et al. onto the seal of Devall et al. as a fully equivalent material taught by Cook et al. to be useful in a gasoline environment.

15. Claims 13,14,16-19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrenkopf et al. (US 2003/0136448) in view of Ludwig (US 2,782,801).

Regarding claim 13,14,16-19 and 22, Farrenkopf et al. disclose a method of making a filler tube valve (10) comprising, forming a tubular body (12,18) having an inlet in one end (14) thereof and forming an outlet opening (22) in the wall thereof and forming an annular valve seat (42) intermediate the inlet and outlet opening, disposing the poppet in the body for movement therein and biasing (through the use of spring 38) the poppet in a direction to seat the annular sealing surface against the valve seat,

forming deflecting surfaces on the upstream side of the poppet for directing the end of a siphon hose through the outlet opening in (Col.5, Lns.12-18) and in figures 1-3, and the deflecting surfaces (32,36 and in particular 50) includes forming turbulence reducing surfaces, the step of biasing the annular sealing surface includes disposing a coil spring (38) in contact with the poppet, the step of forming an outlet opening includes forming a plurality of openings (22), the step of forming a tubular body includes forming a plurality of deflecting vanes (28) internally and upstream of the valve seat, step of forming a poppet includes forming a centrally disposed guide post (34) and slidably guiding (13) the post on the body in (Col. 6, Lns.1-5).

Firstly, Farrenkopf et al. lacks forming a poppet and overmolding elastomeric material thereon and forming annular sealing surface on the poppet with the overmolding.

Ludwig teaches the method of forming a poppet and overmolding elastomeric material thereon and forming annular sealing surface on the poppet with the overmolding in (Col. 2, Lns. 3-7).

In view of the Ludwig patent, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Farrenkopf et al. an "overmolded" seal element for the purpose of physically creating the seal and mechanically attaching the seal element to the poppet head in one assembly step as recognized by Ludwig.

Secondly, Farrenkopf et al. lacks a poppet includes forming an annular groove for the overmolding.

Ludwig shows the method of a poppet includes forming an annular groove for the overmolding as in figure 2.

In view of the Ludwig patent, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Farrenkopf et al. with a poppet includes forming an annular groove for the overmolding, of Ludwig, in order to provide a seal which will be held in rigid position when subjected to pressure as in (Col. 1, Lns. 26-31).

16. Claims 13,14,15,23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devall et al. (US 6,056,029) in view of Ludwig (US 2,782,801).

Regarding claim 13,14,15,23 and 24, Devall et al. disclose a method of making a filler tube valve (12) in figure 7, comprising, forming a tubular body (154,156) having an inlet in one end (156) thereof and forming an outlet opening (166) in the wall thereof and forming an annular valve seat (114) intermediate the inlet and outlet opening, disposing the poppet in the body for movement therein and biasing (through the use of spring 116) the poppet in a direction to seat the annular sealing surface against the valve seat, forming deflecting surfaces on the upstream side of the poppet for directing the end of a siphon hose through the outlet opening in (Col.5, Lns. 25-38) and in figure 9, and the deflecting surfaces (228,230) includes forming turbulence reducing surfaces, the step of forming a poppet includes forming surfaces (228,230) on an upstream side thereof for reducing turbulence, the step of forming surfaces for reducing turbulence includes forming a plurality of fins (214).

Devall et al. lacks forming a poppet and overmolding elastomeric material thereon and forming annular sealing surface on the poppet with the overmolding.

Ludwig teaches the method of forming a poppet and overmolding elastomeric material thereon and forming annular sealing surface on the poppet with the overmolding in (Col. 2, Lns. 3-7).

In view of the Ludwig patent, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Devall et al. an "overmolded" seal element for the purpose of physically creating the seal and mechanically attaching the seal element to the poppet head in one assembly step as recognized by Ludwig.

17. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devall et al. (US 6,056,029) and Ludwig (US 2,782,801) and further in view of Horn (US 3,918,418).

Devall et al. and Ludwig have taught all of the features of the claimed invention but lack that the steps of the poppet formed of a plastic acetyl material.

Horn discloses a poppet valve used in an engine that is "formed of a suitable plastic such as acetal resin" in (Col. 6,Lns. 10-12).

In view of the Horn patent, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the poppet formed of a plastic acetyl material of Horn into the assembly of Devall et al. and Ludwig, in order to provide lightweight replacement of metal which would make the vehicle more fuel efficient.

Conclusion

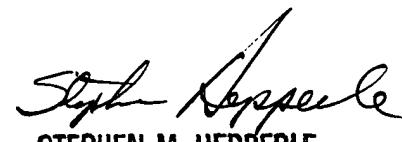
18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jackson et al. (6,026,855) and Matsumoto (6,340,031) disclose similar fuel tank valves. Douglas (3,861,646) discloses an overmolded seal.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Price whose telephone number is (571) 272-2712. The examiner can normally be reached on 8AM - 5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hepperle can be reached on (571) 272-4913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CP  December 21, 2005



STEPHEN M. HEPPERLE
PRIMARY EXAMINER
ART UNIT 347